









# Many internal levels

- ▶ method definition —> macros, metaprogramming
  - ▶ code\_lowered —> generated functions  
simplified code structure
  - ▶ code\_typed —> precompiled modules (.ji)  
global inference  
local optimization  
code\_warntype – dynamic behavior annotations
  - ▶ code\_llvm —> external codegen, llvmpcall-2.0 Julep  
Intermediate Representation (IR) for low-level optimization
  - ▶ code\_native —> static system image (.so / .dll / .dylib)  
Machine Code representation

# Interprocedural Optimization (IPO)